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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/891,144	06/25/2001	Robert H. Grubbs	P 0278319 CIT-3219	8866

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Pillsbury Winthrop LLP
Intellectual Property Group
Calendar/Docket Dept.
50 Fremont Street
San Francisco, CA 94105

EXAMINER

ZUCKER, PAUL A

ART UNIT	PAPER NUMBER
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1621

DATE MAILED: 01/08/2003

8

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/891,144

Applicant(s)

GRUBBS ET AL.

Examiner

Paul A. Zucker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 42 is/are allowed.
- 6) ☒ Claim(s) 1-26 and 33-40 is/are rejected.
- 7) ☒ Claim(s) 27-32 and 41 is/are objected to.
- 8) ☒ Claim(s) 1-42 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4,5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 19-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 19 and 20 recite the limitation "R¹³" here is insufficient antecedent basis for this limitation in the claims. Claims 19 and 20 and their dependents are therefore rendered indefinite.
2. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 15 fails to further limit claim 11 from which it depends since it defines R¹⁴ as a group other than that contemplated in claim 11.
3. Claim 24 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear how the terminal olefin may be gem-disubstituted and still meet the limitations of claim 1. Claim 24 is therefore rendered indefinite.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1- 14, 16-18, 21, 23, 26 and 33-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Fürstner et al (Journal of Organic Chemistry, Ruthenium Carbene Complexes with N,N-Bis(mesityl)imidazol-2-ylidene Ligands: RCM Catalysts of Extended Scope, 2000, 65, pages 2204-2207). Fürstner discloses (Page 2206, Column 2, Table 1, entries 2,3 and 6-8) the ring-closing metathesis reaction between a terminal olefin and a gem-disubstituted olefin to give a trisubstituted olefin product in the presence of catalyst 3a (See page 2204, column 2, center). Fürstner discloses the reaction of acrylates as well as acrylamides.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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5. Claims 22 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fürstner et al (Journal of Organic Chemistry, 2000, 65, pages 2204-2207).

Instantly claimed is a method for the synthesis of trisubstituted olefins from the reaction between a terminal olefin and a gem-disubstituted olefin in the presence of a ruthenium or osmium catalyst.

Fürstner discloses (Page 2206, Column 2, Table 1, entries 2,3 and 6-8) the ring-closing metathesis reaction between a terminal olefin and a gem-disubstituted olefin to give a trisubstituted olefin product in the presence of catalyst 3a (See page 2204, column 2, center). Fürstner further teaches the reaction of acrylates as well as acrylamides. Fürstner also teaches use of a reaction temperature of $\sim 80^{\circ}\text{C}$ (refluxing dichloromethane).

The differences between the process taught by Fürstner and the instantly claimed process are:

- a. the instant use of an acrylamide as the α -functionalized olefin, and;
- b. conducting the reaction at room temperature.

While Fürstner does not exemplify (Page 2206, Column 2, Table 1, entries 11 and 12) the reaction of acrylamides to form trisubstituted olefins, showing isomerization instead (entry 12), he does teach (Page 2207, column 1, lines 4-7) that tertiary amides undergo the metathesis reaction. Thus it would be obvious to one of ordinary skill in the art that one could modify the substrate as suggested by Fürstner to

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achieve the synthesis of trisubstituted acylamides by replacing the N-hydrogen atom in a secondary acrylamide as suggested, and therefore motivated, by Fürstner.

Similarly the use of a lower temperature of reaction is obvious since temperature is well understood by one of ordinary skill in the art to be a result effective variable that is routinely adjusted during process optimization.

Thus the instantly claimed process would have been obvious to one of ordinary skill in the art. The only variations made are those suggested either by Fürstner directly or by routine optimization methodology. There would, therefore, have been a reasonable expectation for success.

Claim Objections

6. Claims 27-32 and 41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Allowable Subject Matter

7. Claims 27-32, 41 and 42 are drawn to allowable subject matter. The following is a statement of reasons for the indication of allowable subject matter: The closest prior art of record, Fürstner et al (Journal of Organic Chemistry, 2000, 65, pages 2204-2207), neither discloses nor fairly suggests the instantly claimed processes employing styrenes as reactants, the use of two components containing carbonyl groups or the reaction of 1-hexene and methyl acrylate.

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Conclusion

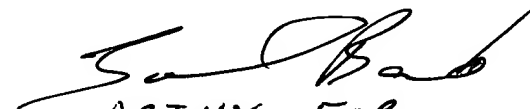
8. Claims 1-42 are pending. Claims 1-26 and 33-40 are rejected. Claims 27-32 and 41 are objected to. Claim 42 is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A. Zucker whose telephone number is 703-306-0512. The examiner can normally be reached on Monday-Friday 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann R. Richter can be reached on 703-308-4532. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-4556 for regular communications and 703-308-4556 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1235.

Paul A. Zucker
Patent Examiner
Technology Center 1600
January 2, 2003


ACTING FOR
Johann Richter, Ph.D., Esq.
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Technology Center 1600